CLAIMS

We Claim:

1. A method for treating a damaged ciliated epithelial structure, comprising topical administration of a therapeutically effective amount of a composition comprising vitamin A, whereby treating of the damaged ciliated e epithelial structure is, at least in part, achieved.

2. The method of claim 1, wherein the ciliated epithelial structure is selected from the group consisting of: nasal or paranasal sinus mucosa; tracheal epithelium; middle-ear epithelium, including respiratory epithelium, ciliated epithelium and cuboidal epithelium; and combinations thereof.

3. The method of claim 1, wherein the ciliated epithelial structure comprises ciliated paranasal sinus mucosa.

4. The method of claim 1, wherein damage comprises damage selected from the group consisting of acute or chronic sinus disease, infection, mechanical, surgical intervention, and combinations thereof.

5. The method of claim 1, wherein damage is that caused by surgical intervention.

6. The method of claim 1, wherein topical administration comprises administration by a medium selected from the group consisting of aqueous or non-aqueous gels, solutions, ointments, salves, lotions, unguents, sprays, aerosolized or nebulized particles, coatings, impregnations of packing material or sponge material or strip gauze, and combinations thereof.

7. The method of claim 1, wherein treating comprises affecting an indicator selected from the group consisting of: increase, relative to untreated, in ciliated paranasal sinus mucosa; promotion, relative to untreated, of ciliated epithelial healing or regeneration; reduction, relative to untreated, of serous gland loss; reduction, relative to untreated, of laminar fibrosis, including of the lamina propria; effect, relative to untreated on mucociliary density

change, including causing a greater density of regenerated cilia; effect, relative to normal, on bone morphometry, including sinus bone morphometry.

8. The method of claim 1, wherein vitamin A is administered at a concentration range selected from the group consisting of: about 0.001% to about 0.25% (w/w); about 0.005% to about 0.025% (w/w); about 0.01% to about 0.025% (w/w), and about 0.001% to about 0.05%.

9. A pharmaceutical composition for topically treating a damaged ciliated epithelial structure, comprising a therapeutically effective amount of vitamin A and at least one of a pharmaceutically acceptable diluent, excipient, or vehicle, to be administered topically to damaged ciliated epithelial structures.

10. The pharmaceutical composition of claim 9, wherein vitamin A is at a concentration range selected from the group consisting of: about 0.001% to about 0.25% (w/w); about 0.005% to about 0.025% (w/w); about 0.01% to about 0.025% (w/w), and about 0.001% to about 0.01% (w/w).

11. A method for treating a damaged ciliated epithelial structure, comprising topical administration of a therapeutically effective amount of a composition comprising vitamin A (including retinoic acid), wherein the ciliated epithelial structure is selected from the group consisting of nasal or paranasal sinus mucosa, tracheal epithelium, middle-ear epithelium, and combinations thereof, and whereby treating of the damaged ciliated epithelial structure is, at least in part, achieved.

12. The method of claim 11, wherein topical administration comprises administration by a medium selected from the group consisting of aqueous or non-aqueous gels, solutions, ointments, salves, lotions, unguents, sprays, aerosolized or nebulized particles, coatings, impregnations of packing material or sponge material or strip gauze, and combinations thereof.

13. Use, topically, of vitamin A in manufacture of a medicament for the treatment of damaged ciliated epithelial structures.

14. The use of claim 13, wherein the ciliated epithelial structure is selected from the group consisting of: nasal or paranasal sinus mucosa; tracheal epithelium; middle-ear epithelium, including respiratory epithelium, ciliated epithelium and cuboidal epithelium; and combinations thereof.

15. The use of claim 13, wherein the ciliated epithelial structure comprises ciliated paranasal sinus mucosa.

16. The use of claim 13, wherein damage comprises damage selected from the group consisting of acute or chronic sinus disease, infection, mechanical, surgical intervention, and combinations thereof.

17. The use of claim 13, wherein damage is that caused by surgical intervention.

18. The use of claim 13, wherein topical administration comprises administration by a medium selected from the group consisting of aqueous or non-aqueous gels, solutions, ointments, salves, lotions, unguents, sprays, aerosolized or nebulized particles, coatings, impregnations of packing material or sponge material or strip gauze, and combinations thereof.

19. The use of claim 13, wherein treating comprises affecting an indicator selected from the group consisting of: increase, relative to untreated, in ciliated paranasal sinus mucosa; promotion, relative to untreated, of ciliated epithelial healing or regeneration; reduction, relative to untreated, of serous gland loss; reduction, relative to untreated, of laminar fibrosis, including of the lamina propria; effect, relative to untreated on mucociliary density change, including causing a greater density of regenerated cilia; effect, relative to normal, on bone morphometry, including sinus bone morphometry.

20. The use of claim 13, wherein vitamin A is administered at a concentration range selected from the group consisting of: about 0.001% to about 0.25% (w/w); about 0.005% to about 0.025% (w/w); about 0.01% to about 0.025% (w/w), and about 0.001% to about 0.05%.

21. The method of any one of claims 1 or 11, wherein vitamin A is retinoic acid.

22. The pharmaceutical composition of claim 9, wherein vitamin A is retinoic acid.

23. The use of claim 13, wherein vitamin A is retinoic acid.